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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,547	10/19/2001	James W. Willen	RA-5368	7125
7590	09/12/2005		EXAMINER	
Michael B. Atlass Unisys Corporation M.S. 4773 PO Box 64942 St. Paul, MN 55164-0942			TRUONG, CAMQUY	
			ART UNIT	PAPER NUMBER
			2195	
DATE MAILED: 09/12/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/038,547

Applicant(s)

WILLEN ET AL.

Examiner

Camquy Truong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5-10 and 12-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-10 and 12-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 5-10, and 12-26 are presented for examination. Claims 1-4 and 11 are canceled.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 5-10, and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The following claim language is indefinite:

i. As to claim 5, line 11, it is not clearly understood what is meant by “transferring control of said next available IP resource from said second stage lottery program to a task assigned to said selected on of said at least two levels” (i.e. transferring available IP resource to task associated with the selected task level ).

ii. As to claim 8, lines 1-2, it is not clearly understood what is meant by “ each level of said at least two levels will only have tasks of like quantum values within said each level” (i.e. tasks in each level have a quantum values?).

iii. As to claim 18, lines 6-7, it is not clearly understood what is meant by “transferring control from said second stage lottery program to a task” found”; line 7, it is unclearly indicated whether “ a task found ” refers to at least two tasks in line 3.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-10 and 12-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liana L. Fong et al. (Time-Function Scheduling: A General Approach To Controllable Resource Management, March 1995) in view of Nicastro et al. (U.S. Patent 5,569, 084).

6. Liana L.Fong et al was cited in the last office action.

7. As to claim 5, Liana teaches the inventions substantially as claimed include a second stage lottery program for a dispatcher program that dispatches tasks within an operation system of a computer system, the computer system supporting at least two classes of said tasks, each of said classes including at least two levels of said tasks, said dispatcher program to determine which of said tasks will be assigned to a next available IP resource, said second stage lottery program comprising:

a transfer program for transferring control of said next available IP resource from said second stage lottery program to a task assigned to said selected one of said at least two levels (page 14, lines 1-20; page 21, line 28 – page 22, line1).

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8. Liana does not explicitly teach the random number generator and selection program for generating a first random number for selecting one of said at least two classes, and for generating a second random number for selecting one of said at least two levels within said selected class. However, Nicaastro teaches random number generator and selection program for generating a first random number for selecting one of said at least two classes, and for generating a second random number for selecting one of said at least two levels within said selected class (col. 4, lines 49-58; col. 6, lines 16-22; col. 7, lines 25-32).

9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Liana and Nicaastro because Nicaastro's random number generator and selection program for generating a first random number for selecting one of said at least two classes, and for generating a second random number for selecting one of said at least two levels within said selected class would improve the efficiency of Liana's system by providing an effective and flexible control mechanism for selecting the terminal node based on probabilistic algorithms.

10. As to claim 6, it is rejected for the same reason as claim 5. In addition, Liana teaches a level switching routine for handling a failure by said transfer program to find a task on a selected one of said at least two levels, said level switching routine for selecting a different one of said at least two levels that is associated with a task and

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allowing transfer of control to said task associated with said different one of said at least two levels (page. 14, lines 1-19).

11. As to claim 7, it is rejected for the same reason as claim 5. In addition, Liana teaches any one of said at least two levels is two times more likely to be selected than its next lower level among said at least two levels (page. 16, line 23-page 17, line 8).

12. As to claim 8, Liana teaches each level of said at least two levels will have tasks of like quantum values wherein each of quantum values defines an amount of time a task will be assigned to said next available IP resource (page 7, line 20 – page 8, line 1; page 16, line 22).

13. As to claims 9-10, Liana teaches each of said tasks has a quantum value, said quantum value identifying a computer system specific amount of time in which said each of said tasks with said quantum value may continuously execute on an instruction processor resource, and wherein said second stage lottery employs a quantum bias routine, said quantum bias routine comprising:

a data capture routine for determining how much of an allotted segment of said quantum value a task that has executed used before returning control to said dispatcher (page 7, line 20 – page 8, line 1); and

a bias adjustment routine for adjusting said allotted segment of a said

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quantum value based on how much of said allotted segment was used (page 7, line 20 – page 8, line 4; page 12, lines 12-15; page 15, lines 5-15) .

14. As to claim 12, it is rejected for the same reason as claim 1. In addition, Liana teaches a computer system having a quantum timer settable to allow processing on an IP resource for a limited duration of one or more tasks, also having an operating system having a dispatcher program wherein all said any tasks are identifiable as being members of classes (page 8, lines 14-15) and wherein said dispatcher program comprises:

a) a scheduler code section executable to determine for how long, and to which of said one or more tasks, an IP resource will be next assigned (page 7, lines 20-22; page 14, line 1- 16).

15. As to claims 13-15, Liana teaches first stage chooses a class randomly from among all said classed using a bias settable by user (page 13, line 29 - page 14, line 1).

16. As to claims 16-17, Liana teaches if the scheduler code section's first of two stages selects a class which is empty of said any tasks, said scheduler code section next chooses another class of available classes (page 10, lines 1-14).

17. As to claim 18, it is rejected for the same reason as claim 1.

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18. As to claims 19-20, they are rejected for the same reason as claim 1. In addition, Liana teaches a method for use by a dispatcher algorithm in an operating system in a computer system for selecting a task to provide with an available instruction processor resource, wherein the task may be selected from one or more classes, each of which may have one or more priority level, wherein said method comprises:

determining whether within a scheduler queue there are any task pointers within said priority levels of said classes of tasks on said scheduler queue, and if so, determining whether any said any task pointers are above a second stage lottery line, and if so assigning a first of said any tasks indicated by said any task pointers above said second stage lottery line to said available instruction processor resource (page 8, lines 1-18; page 10, lines 1-6), but if not,

and if there is only one said priority level having any of said any task pointers, assigning a first of said any tasks corresponding to said any task pointers at said only one said priority level to said available instruction processor resource (page 8, line 19-page 8, line 8).

19. As to claims 21-22, Liana teaches moving said task pointers within priority levels of said one or more classes on said scheduler queue, wherein each priority level can maintain a chain of said task pointers and wherein there are more than one of said priority levels, said task pointer moving process comprising:

maintaining a task assigned quantum which identifies for each task on said scheduler queue a set amount of instruction processor resource to which



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said each task is entitled upon being assigned to said instruction processor resource (page 7, line 20 – page 8, line 1);

placing said each task into a said priority level based upon a value in said task assigned quantum for said each task (page 7, line 20- page 4); and

changing said each task priority level based on how much of said value in said task assigned quantum for said each task said each task used a last time said each task was assigned to said available instruction processor resource (page 12, lines 12-15; page 15, lines 5-6 ).

20. As to claim 23, Liana teaches said task assigned quantum is assigned for said each task prior to a said task pointer being on said scheduler queue (page 7, line 20 – page 8, line4).

21. As to claim 24, Liana teaches a first stage lottery algorithm selects which of said classes of tasks on said scheduler queue will have tasks assignable to said available instruction processor resource (page 13, lines 29-32).

22. As to claims 25-26, they are rejected for the same reason as claims 19-20.

### ***Response to the argument***

23. Applicant's arguments filed 6/16/05 for claims 5-10 and 12-26 have been considered but are moot in view of the new ground(s) rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Conclusion***

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Camquy Truong whose telephone number is (571) 272-3773. The examiner can normally be reached on 8AM – 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3756.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIP. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIP system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

Camquy Truong

August 31, 2005



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